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FORM PTO-1449

## INFORMATION DISCLOSURE STATEMENT

ATTY. DOCKET NO.  
0652.2310001APPLICATION NO.  
09/893,443APPLICANT  
Gmachl, et al.FILING DATE  
06/29/2001GROUP  
1641 1642

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
CY	AA1	5,726,025	03/10/1998	Kirschner, M.W., et al.,	435	7.2	04/20/1995
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## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
CY	AL1	WO 96/33286	10/24/1996	WIPO			Yes No
CY	AM1	WO 98/21326	05/22/1998	WIPO			Yes No
	AN						Yes No
	AO						Yes No
	AP						Yes No

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

CY	AR	1	Altschul, S.F., et al., "Gapped BLAST and PSI-BLAST: a new generation of protein database search programs," <i>Nucl. Acids Res.</i> 25:3389-3402, Oxford University Press (1997).
↓	AS	1	Amon, A., et al., "Closing the Cell Cycle Circle in Yeast: G2 Cyclin Proteolysis Initiated at Mitosis Persists until the Activation of G1 Cyclins in the Next Cycle," <i>Cell</i> 77:1037-1050, Cell Press (1994).
CY	AT	1	Araki, H., et al., "The CDC26 gene of <i>Saccharomyces cerevisiae</i> is required for cell growth only at high temperature," <i>Mol. Gen. Genet.</i> 231:329-331, Springer (1992)

EXAMINER *Cheney H. Y.*

DATE CONSIDERED 1-14-03

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	AN						Yes No
	AO						Yes No
	AP						Yes No

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

CY	AR	2	Aristarkhov, A. et al., "E2-C, a cyclin-selective ubiquitin carrier protein required for the destruction of mitotic cyclins," <i>Proc. Natl. Acad. Sci. USA</i> 93:4294-4299, National Academy Press (1996)
↓	AS	2	Bai, C., et al., "SKP1 Connects Cell Cycle Regulators to the Ubiquitin Proteolysis Machinery through a Novel Motif, the F-Box," <i>Cell</i> 86:263-274, Cell Press (1996)
CY	AT	2	Borden, K.L.B., and Freemont, P.S., "The RING finger domain: a recent example of a sequence-structure family," <i>Curr. Opin. Struct. Biol.</i> 6:395-401, Elsevier Science Ltd (1996)

EXAMINER

Christopher H. K.

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	AP						Yes No

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

CY	AR	<u>3</u>	Borden, K.L.B., et al., "In vivo and in vitro characterization of the B1 and B2 zinc-binding domains from the acute promyelocytic leukemia protooncogene PML," <i>Proc. Natl. Acad. Sci. USA</i> 93:1601-1606, The National Academy Press (1996)
CY	AS	<u>3</u>	Ciechanover, A., "The Ubiquitin-Proteasome Proteolytic Pathway," <i>Cell</i> 79:13-21, Cell Press (1994)
CY	AT	<u>3</u>	Cohen-Fix, O., et al., "Anaphase initiation in <i>Saccharomyces cerevisiae</i> is controlled by the APC-dependent degradation of the anaphase inhibitor Pds1p," <i>Genes Dev.</i> 10:3081-3093, Cold Spring Harbor Laboratory Press (1996)

EXAMINER *Christopher H. Yu*

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	AM						Yes No
	AN						Yes No
	AO						Yes No
	AP						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
CY	AR	4	Cvrčková, F. and Nasmyth, K., "Yeast G <sub>1</sub> cyclins CLN1 and CLN2 and a GAP-like protein have a role in bud formation," <i>EMBO J.</i> 12:5277-5286, Oxford University Press (1993)
CY	AS	4	Dahmann, C., et al., "S-phase-promoting cyclin-dependent kinases prevent re-replication by inhibiting the transition of replication origins to a pre-replicative state," <i>Curr. Biol.</i> 5:1257-1269, Current Biology Ltd (1995)
CY	AT	4	Deshales, R.J., "SCF and Cullin/RING H2-Based Ubiquitin Ligases," <i>Annu. Rev. Cell Dev. Biol.</i> 15:435-467, Annual Reviews (1999)

EXAMINER <i>Chris J. H. H. H.</i>	DATE CONSIDERED 1-14-03
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	AM						Yes No
	AN						Yes No
	AO						Yes No
	AP						Yes No

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

CY	AR	<u>5</u>	Ellison, M.J., and Hochstrasser, M., "Epitope-tagged Ubiquitin: A New Probe for Analyzing Ubiquitin Function," <i>J. Biol. Chem.</i> 266:21150-21157, American Society for Biochemistry and Molecular Biology, Inc. (1991)
CY	AS	<u>5</u>	Engle, D.B., et al., "A Negative Regulator of Mitosis in <i>Aspergillus</i> Is a Putative Membrane-spanning Protein," <i>J. Biol. Chem.</i> 265:16132-16137, American Society for Biochemistry and Molecular Biology, Inc. (1990)
CY	AT	<u>5</u>	Epstein, C.B. and Cross, F.R., "CLB5: a novel B cyclin from budding yeast with a role in S phase," <i>Genes Dev.</i> 6:1695-1706, Cold Spring Harbor Laboratory Press (1992)

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Christopher HY

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	AN						Yes No
	AO						Yes No
	AP						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
CY	AR	<u>6</u>	Fang, S., et al., "Mdm2 Is a RING Finger-dependent Ubiquitin Protein Ligase for Itself and p53," <i>J. Biol. Chem.</i> 275:8945-8951, American Society for Biochemistry and Molecular Biology, Inc. (March 2000)
CY	AS	<u>6</u>	Funabiki, H., et al., "Cut2 proteolysis required for sister-chromatid separation in fission yeast," <i>Nature</i> 381:438-441, Macmillan Magazines Ltd (1996)
CY	AT	<u>6</u>	Gershkovich, A.A. and Kholodovych, V.V., "Fluorogenic substrates for proteases based on intramolecular fluorescence energy transfer (IFETS)," <i>J. Biochem. Biophys. Methods</i> 33:135, Elsevier Science Publishers B.V. (1996)

EXAMINER <i>Chenaph H Y</i>	DATE CONSIDERED <i>1-14-03</i>
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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
CY	AR	7	Gieffers, C., et al., "Cullins and cell cycle control," <i>Protoplasma</i> 211:20-28, Springer-Verlag Wien (2000)
CY	AS	7	Gietz, R.D. and Sugino, A., " New yeast- <i>Escherichia coli</i> shuttle vectors constructed with in vitro mutagenized yeast genes lacking six-base pair restriction sites," <i>Gene</i> 74:527-534, Elsevier Science Publishers B.V. (1988)
CY	AT	7	Glotzer, M. et al., "Cyclin is degraded by the ubiquitin pathway," <i>Nature</i> 349:132-138, Macmillan Magazines Ltd (1991)

EXAMINER <u>Christopher H Yeh</u>	DATE CONSIDERED <u>1-14-03</u>
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	AN						Yes No
	AO						Yes No
	AP						Yes No

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

CY	AR	8	Grossberger, R. et al., "Characterization of the DOC1/APC10 Subunit of the Yeast and the Human Anaphase-promoting Complex," <i>J. Biol. Chem.</i> 274:14500-14507, American Society for Biochemistry and Molecular Biology, Inc. (1999)
↓	AS	8	Hatfield, P.M. et al., "Cloning of Ubiquitin Activating Enzyme from Wheat and Expression of a Functional Protein in <i>Escherichia coli</i> ," <i>J. Biol. Chem.</i> 265:15813-15817, American Society for Biochemistry and Molecular Biology, Inc. (1990)
CY	AT	8	Hatfield, P.M. and Vierstra, R.D., "Multiple Forms of Ubiquitin-activating Enzyme E1 from Wheat," <i>Biol. Chem.</i> 267:14799-14803, Walter de Gruyter and Company (1992)

EXAMINER *Chungh H Y*DATE CONSIDERED *1-14-03*

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	AO						Yes No
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CY	AR	2	Hirano, T., et al., "A Temperature-sensitive Mutation of the <i>Schizosaccharomyces pombe</i> Gene <i>nuc2+</i> That Encodes a Nuclear Scaffold-like Protein Blocks Spindle Elongation in Mitotic Anaphase," <i>J. Cell Biol.</i> 106:1171-1183, Rockefeller University Press (1988)
CY	AS	2	Holloway, S.L., et al., "Anaphase Is Initiated by Proteolysis Rather Than by the Inactivation of Maturation-Promoting Factor," <i>Cell</i> 73:1393-1402, Cell Press (1993)
CY	AT	2	Honda, R. and Yasuda, H., "Activity of MDM2, a ubiquitin ligase, toward p53 or itself is dependent on the RING finger domain of the ligase," <i>Ocogene</i> 19:1473-1476, Macmillan Magazines Ltd (March 2000)

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CY	AR	<u>10</u>	Irniger, S., et al., "Genes Involved in Sister Chromatid Separation Are Needed for B-Type Cyclin Proteolysis in Budding Yeast," <i>Cell</i> 81:269-277, Cell Press (1995)
↓	AS	<u>10</u>	Jackson, P.K., "Cell cycle: Cull and destroy," <i>Curr. Biol.</i> 6:1209-1212, Current Biology Ltd (1996)
CY	AT	<u>10</u>	James, S.W., et al., "The <i>Aspergillus nidulans</i> bime (blocked-in-mitosis) gene encodes multiple cell cycle functions involved in mitotic checkpoint control and mitosis," <i>J. Cell Sci.</i> 108:3485-3499, The Company of Biologists Ltd (1995)

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CY	AR	<u>11</u>	Joazeiro, C.A.P., et al., "The Tyrosine Kinase Negative Regulator c-Cbl as a RING-Type, E2-Dependent Ubiquitin-Protein Ligase," <i>Science</i> 286:309-312, American Association for the Advancement of Science (1999)
CY	AS	<u>11</u>	Joazeiro, C.A. and Weissman, A.M., "RING Finger Proteins: Mediators of Ubiquitin Ligase Activity," <i>Cell</i> 102:549-552, Cell Press (September 2000)
CY	AT	<u>11</u>	Juang, Y.-L., et al., "APC-Mediated Proteolysis of Ase1 and the Morphogenesis of the Mitotic Spindle," <i>Science</i> 275:1311-1314, American Association for the Advancement of Science (1997)

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CY	AR	<u>12</u>	Kamura, T. et al., "Rbx1, a Component of the VHL Tumor Suppressor Complex and SCF Ubiquitin Ligase," <i>Science</i> 284:657-661, American Association for the Advancement of Science (1999)
CY	AS	<u>12</u>	King, R.W., et al., "A 20S Complex Containing CDC27 and CDC16 Catalyzes the Mitosis-Specific Conjugation of Ubiquitin to Cyclin B," <i>Cell</i> 81:279-288, Cell Press (1995)
CY	AT	<u>12</u>	Kipreos, E.T., et al., "cul-1 Is Required for Cell Cycle Exit in <i>C. elegans</i> and Identifies a Novel Gene Family," <i>Cell</i> 85:829-839, Cell Press (1996)

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CY	AR	<u>13</u>	Kramer, E.R. et al., "Activation of the human anaphase-promoting complex by proteins of the CDC20/Fizzy family," <i>Curr. Biol.</i> 8:1207-1210, Current Biology Ltd (1998)
↓	AS	<u>13</u>	Lamb, J.R., et al., "Cdc16p, Cdc23p and Cdc27p form a complex essential for mitosis," <i>EMBO J.</i> 13:4321-4328, Oxford University Press (1994)
CY	AT	<u>13</u>	Lamond, A.I., and Mann, M., "Cell biology and the genome projects - a concerted strategy for characterizing multiprotein complexes by using mass spectrometry," <i>Trends Cell Biol.</i> 7:139-142, Elsevier Science Ltd (1997)

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CY	AR	<u>14</u>	Längle-Rouault, F. and Jacobs, E., "A method for performing precise alterations in the yeast genome using a recyclable selectable marker," <i>Nucl. Acids Res.</i> 23:3079-3081, Oxford University Press (1995).
CY	AS	<u>14</u>	Leverson, J.D. et al., "The APC11 RING-H2 Finger Mediates E2-Dependent Ubiquitination," <i>Mol. Biol. Cell</i> 11:2315-2325, The American Society for Cell Biology (July 2000)
CY	AT	<u>14</u>	Levkowitz, G. et al., "Ubiquitin Ligase Activity and Tyrosine Phosphorylation Underlie Suppression of Growth Factor Signaling by c-Cbl/Sli-1," <i>Mol. Cell</i> 4:1029-1040, Cell Press (1999)

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FORM PTO-1449 <u>INFORMATION DISCLOSURE STATEMENT</u>	ATTY. DOCKET NO. 0652.2310001	APPLICATION NO. 09/893,443
	APPLICANT Gmachl, et al.	
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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
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	AM						Yes No
	AN						Yes No
	AO						Yes No
	AP						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
CY	AR	<u>15</u>	Lorick, K.L., et al., "RING fingers mediate ubiquitin-conjugating enzyme (E2)-dependent ubiquitination," <i>Proc. Natl. Acad. Sci. USA</i> 96:11364-11369, National Academy Press (1999)
↓	AS	<u>15</u>	Luca, F.C., et al., "Both cyclin AΔ60 and BΔ97 are stable and arrest cells in M-phase, but only cyclin BΔ97 turns on cyclin destruction," <i>EMBO J.</i> 10:4311-4320, Oxford University Press (1991)
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CY	AR	<u>16</u>	Mann, M. and Wilm, M., "Error-Tolerant Identification of Peptides in Sequence Databases by Peptide Sequence Tags," <i>Anal. Chem.</i> 66:4390-4399, American Chemical Society (1994).
↓	AS	<u>16</u>	Matayoshi, E.D. et al., Novel Fluorogenic Substrates for Assaying Retroviral Proteases by Resonance Energy Transfer," <i>Science</i> 247:954-958, American Association for the Advancement of Science (1990)
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CY	AR	<u>17</u>	Morgan, D.O., "Regulation of the APC and the exit from mitosis," Nat. Cell Biol. 1:E47-E53, Macmillan Publishers, Ltd (1999)
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CY	AR	<u>19</u>	O'Donnell, K.L., et al., "bimA encodes a member of the tetratricopeptide repeat family of proteins and is required for the completion of mitosis in <i>Aspergillus nidulans</i> ," J. Cell Sci. 99:711-719, The Company of Biologists Ltd (1991)
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CY	AR	<u>21</u>	Peters, J.-M. "Subunits and substrates of the anaphase-promoting complex," <i>Exper. Cell. Res.</i> 248:339-349, Academic Press Inc. (1999)
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CY	AR	<u>22</u>	Rolfe, M., et al., "Reconstitution of p53-ubiquitinylation reactions from purified components: The role of human ubiquitin-conjugating enzyme UBC4 and E6-associated protein (E6AP)," <i>Proc. Natl. Acad. Sci. USA</i> 92:3264-3268, National Academy of Sciences (1995)
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## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

CY	AR	23	Schwob, E., and Nasmyth, K., "CLB5 and CLB6, a new pair of B cyclins involved in DNA replication in <i>Saccharomyces cerevisiae</i> ," <i>Genes Dev.</i> 7:1160-1175, Cold Spring Laboratory Press (1993)
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CY	AT	23	Selvin, P., "The renaissance of fluorescence resonance energy transfer," <i>Nat. Struct. Biol.</i> 7:730-734, Nature America Inc. (September 2000)

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CY	AR	24	Seol, J.H. et al., "Cdc53/cullin and the essential Hrt1 RING-H2 subunit of SCF define a ubiquitin ligase module that activates the E2 enzyme Cdc34," <i>Genes Dev.</i> 13:1614-1626, Cold Spring Harbor Laboratory (1999)
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CY	AT	24	Shevchenko, A. et al., "Mass Spectrometric Sequencing of Proteins from Silver-Stained Polyacrylamide Gels," <i>Anal. Chem.</i> 68:850-858, American Chemical Society (1996)

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cy	AR	25	Shevchenko, A. et al., "Linking genome and proteome by mass spectrometry: Large-scale identification of yeast proteins from two dimensional gels," <i>Proc. Natl. Acad. Sci. USA</i> 93:14440-14445, National Academy Press (1996)
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CY	AR	26	Skowrya, D. et al., "Reconstitution of G <sub>1</sub> Cyclin Ubiquitination with Complexes Containing SCF <sup>Grr1</sup> and Rbx1," <i>Science</i> 284:662-665, American Association for the Advancement of Science (1999)
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CY	AR	28	Tugendreich, S., et al., "Linking yeast genetics to mammalian genomes: Identification and mapping of the human homolog of CDC27 via the expressed sequence tag (EST) data base," <i>Proc. Natl. Acad. Sci. USA</i> 90:10031-10035, National Academy Press (1993)
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Christopher HX

DATE CONSIDERED

1-14-03

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FORM PTO-1449

INFORMATION DISCLOSURE STATEMENTATTY. DOCKET NO.  
0652.2310001APPLICATION NO.  
09/893,443APPLICANT  
Gmachl, et al.FILING DATE  
06/29/2001GROUP  
1641 1642

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION
	AL						Yes No
	AM						Yes No
	AN						Yes No
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CY	AR	29	Willems, A.R., et al., "Cdc53 Targets Phosphorylated G1 Cyclins for Degradation by the Ubiquitin Proteolytic Pathway," Cell 86:453-463, Cell Press (1996)
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	AN						Yes No
	AO						Yes No
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## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

CY	AR	<u>30</u>	Xie, Y. and Varshavshky, A., "The E2-E3 interaction in the N-end rule pathway: the RING-H2 finger of E3 is required for the synthesis of multiubiquitin chain," <i>EMBO J.</i> 18:6832-6844, Oxford University Press (1999)
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CY	AR	<u>31</u>	Yu, H. et al., "Identification of a Cullin Homology Region in a Subunit of the Anaphase-Promoting Complex," <i>Science</i> 279:1219-1222, American Association for the Advancement of Science (1998)
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CY	AR	32	Zachariae, W. et al., "Mass Spectrometric Analysis of the Anaphase-Promoting Complex from Yeast Identification of a Subunit Related to Cullins," <i>Science</i> 279:1216-1219, American Association for the Advancement of Science (1998)
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↓	AT	32	Zou, H. et al., "Identification of a Vertebrate Sister-Chromatid Separation Inhibitor Involved in Transformation and Tumorigenesis," <i>Science</i> 285:418-422, American Association for the Advancement of Science (1999)

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*Christopher H. Yoon*

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	AL1						Yes No
	AM1						Yes No
	AN						Yes No
	AO						Yes No
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CY	AR	33	International Search Report of International Application No. PCT/EP97/06268, mailed August 5, 1998.
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↓	AT	33	NCBI Entrez, GenBank Accession No. U39317, from Jensen, J.P., et al. (Mar 1996)

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Christopher H. X.

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1-14-03

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	AM1						Yes No
	AN						Yes No
	AO						Yes No
	AP						Yes No

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

CY	AR	34	NCBI Entrez, GenBank Accession No. AF142059, Ohta, T., et al. (Jul 1999)
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CY	AT	34	NCBI Entrez, GenBank Accession No. AF247565, from Chan, A.H. et al. (Mar 2001)

EXAMINER <i>Christopher H. E.</i>	DATE CONSIDERED 1-14-03
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	AM1						Yes No
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	AO						Yes No
	AP						Yes No

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

cy	AR	35	NCBI Entrez, GenBank Accession No. U33199, from Sigalas, T. et al. (Nov 2001)
	AS	35	
	AT	35	

EXAMINER <i>Christopher HX</i>	DATE CONSIDERED 1-24-03
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